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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/008,048      | 11/07/2001  | Sean T. Crowley      | M-11561 US          | 3933             |

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EXAMINER

CRUZ, LOURDES C

ART UNIT PAPER NUMBER

2827

DATE MAILED: 07/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,048

Applicant(s)

CROWLEY ET AL.

Examiner

Lourdes C. Cruz

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

It has come to the attention of the examiner that while on page 4 of the specification Applicant has listed various related Applications, and while Applicant's disclosure says that these applications listed are incorporated by reference, copies of such patent applications have not been provided.

#### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "186" has been used to designate both the straps first surface and the cover portion first surface (page 8, line 20). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Lam et al. (US 6256200).

Lam et al. discloses (See Figs. 6A-6F) a semiconductor device comprising:

A die 110; a die pad 104 with first and second surfaces, the die being mounted on the die pad first surface; a plurality of leads 130A-F, each lead having first and second surfaces;

A conductive strap 102 disposed between the die and the first surfaces of the leads to electrically couple the leads and the die; an encapsulant material 134 encapsulating the die, at least, at least a portion of the die pad, at least a portion of the conductive strap, and at least a portion of the lead first surfaces,

The second surfaces of the leads (See Fig. 6F, surface outside 134) being exposed in a plane of a horizontal exterior surface of the encapsulant material.

Lam et al. also discloses a package wherein:

- A portion 130D of the conductive strap is exposed through the encapsulant
- At least a portion of the die pad 132B second surface is exposed through the encapsulate
- The strap further comprises a through hole (see hole between 130E-130F) extending through the strap, the encapsulate filling through the hole
- The strap is coupled to the die through a first portion, is coupled to the leads, and has a central portion having aperture 116 formed therein, wherein the encapsulate fills the aperture


- Wherein each lead has a recessed portion 116,118 adjacent the exposed second surface, wherein the encapsulate fills the recessed portion
- The die pad has a recessed portion 116,118 adjacent the die pad second surface, the recessed portion extending about the entire periphery of the die pad second surface, and an encapsulate fills the recessed portion
- The strap further comprises a first end portion (facing 104) and a lip (perpendicular to 116 and 118) extending from the first end portion of the strap, and further comprising a conductive layer 124 disposed between the first end portion of the strap and a first surface of the die, the conductive layer having a greater thickness adjacent the lip than the thickness adjacent the first end portion of the strap (See that 124 covers more area under 102 than under 104)
- A portion of a first surface of the strap is exposed through and flush with a first surface of the encapsulant material
- Each of the leads has a recessed portion 106 formed in the lead first surfaces, a foot portion (end of 130A-F away from 102) of the conductive strap being disposed in each recessed portion
- One end of the conductive strap is secured to the first surface of each lead by conductive layer 124

Lam et al. discloses a MOSFET device and connection to the drain.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 10:00- 6:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Lourdes Cruz  
July 20, 2002

Lourdes C. Cruz  
Examiner  
Art Unit 2827



**KAMAND CUNEO**  
**PRIMARY EXAMINER**